Amendments to the Claims

1.-3. (Cancelled)

4. (Currently Amended) ~~The method of claim 3,~~ A method of increasing a signal-to-noise ratio for at least one carrier in a multicarrier transceiver comprising the steps of:

receiving and storing at least one decoder error for the at least one carrier;

determining at least one two-dimensional adaptive filter tap for each of the at least one carrier in accordance with the at least one decoder error;

determining a noise estimate relating to the at least one decoder error and the at least one two-dimensional adaptive filter tap;

receiving an equalizer output; and

determining a signal having increased signal-to-noise ratio in response to the noise estimate and the equalizer output,

wherein the step of determining at least one adaptive filter tap comprises the minimization of the mean squared error and wherein the minimization of the mean squared error is performed in accordance with the relation: $\xi = E\{e(i,j)^2\} = E\{(f(i,j)y(i,j)\text{-}x(i,j) - \vec{h}_{ij}\vec{e}(i,j)^T)^2\}$ where $x(i,j)$ is a known copy of the transmitted data for the j^{th} bin and the i^{th} symbol, $f(i,j)$ is the FEQ coefficient, $y(i,j)$ is the FFT output, and $\vec{h}_{i,j}\vec{e}(i,j)^T$ is the impulse response filtering of the uncanceled decoder error vector $\vec{e}(i,j)$ with filter coefficient vector $\vec{h}_{i,j}$.

5. (Currently Amended) ~~The method in claim 3,~~ A method of increasing a signal-to-noise ratio for at least one carrier in a multicarrier transceiver comprising the steps of:

receiving and storing at least one decoder error for the at least one carrier;

determining at least one two-dimensional adaptive filter tap for each of the at least one carrier in accordance with the at least one decoder error;

determining a noise estimate relating to the at least one decoder error and the at least one two-dimensional adaptive filter tap;

receiving an equalizer output; and

determining a signal having increased signal-to-noise ratio in response to the noise estimate and the equalizer output,

wherein the step of determining at least one adaptive filter tap comprises the minimization of the mean squared error and wherein the minimization of the mean squared error is performed in accordance with the relation: $\bar{h}_{i+1,j} = \bar{h}_{ij} + \alpha\left(f(i,j)y(i,j)\text{-}x(i,j) - \bar{h}_{ij}\vec{e}(i,j)^T\right)conj\left(\bar{e}(i,j)\right)$ where $x(i,j)$ is a known transmitted symbol, $f(i,j)$ is the FEQ coefficient corresponding to the i^{th} symbol and j^{th} bin, where $y(i,j)$ is the FFT output of the corresponding i^{th} symbol and the j^{th} bin, where $\bar{h}_{i,j}$ is the filter coefficient vector, where α is the corrective coefficient, where $\bar{h}_{i,j}\bar{\vec{e}}(i,j)^T$ is the impulse filtering of the constellation error vector $\vec{e}(i,j)$ with filter coefficient vector $\bar{h}_{i,j}$, and where $conj(\bar{e}(i,j))$ is the complex conjugate of the input signal to the filter.

6. (Currently Amended) A computer readable medium having stored therein instructions for causing a central processing unit to execute the method of claim 4 ~~1~~.

7.-12. (Cancelled)

13. (New) A computer readable medium having stored therein instructions for causing a central processing unit to execute the method of claim 5.